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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,492	02/25/2004	Mario Linke	IR-2455 (2-3840)	7302

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EXAMINER	
VORTMAN, ANATOLY	
ART UNIT	PAPER NUMBER
2835	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/787,492	LINKE, MARIO	
	Examiner	Art Unit	
	Anatoly Vortman	2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/26/06 has been entered. Claim 1 has been amended and claims 7-8 have been cancelled. The Office action follows:

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US/4,395,673 to Kurz or, alternatively, over Applicant Admitted Prior Art (AAPA), each taken with US/2003/0133267 to Beihoff et al. (of record).

• Regarding claim 1, Kurz disclosed (see Fig.) an integrated active rectifier module (D1-D3, TH1-TH3) for supplying recharging power to a battery (BAT) of an automobile, wherein a plurality of active rectification circuits (D1-D3, TH1-TH3) each connectable to a respective phase (W1-W3) of a stator to rectify the power output thereof, but did not disclose that said integrated active rectifier module comprises: a base plate; a plurality of substrates attached to said base plate; wherein power elements for an active rectifier mounted on one of said substrate; elements for a voltage regulator mounted on another substrate; and elements for driving said power elements mounted on another substrate.

AAPA disclosed (Fig. 1) an integrated active rectifier module for supplying recharging power to a battery (14) of an automobile, wherein a plurality of active rectification circuits (22) each connectable to a respective phase (20) of a stator to rectify the power output thereof, but did not disclose that said integrated active rectifier module comprises: a base plate; a plurality of substrates attached to said base plate; wherein power elements for an active rectifier mounted on one of said substrate; elements for a voltage regulator mounted on another substrate; and elements for driving said power elements mounted on another substrate.

Beihoff et al. disclose an integrated active rectifier module comprising; a base plate (12); a plurality of substrates (14, 34) **or** (36, 38) attached to one surface of said base plate (see schematic in figure 2, and the perspective views in figure 11-13) each with respective flexible adhesive ('180' in figure 18, also see description of '180' in paragraphs 0081 and 0082 alluding to expansion mismatch of adherents being accommodated by the layer '180' to reduce stresses, making the layer 'flexible'); a heat sink ('148'+'160' in figure 15A) in thermal contact with said base plate opposite said substrates; power elements (130) for an active rectifier (paragraph

[0067], middle) mounted on one of said substrate (14); elements for a voltage regulator mounted on another substrate (38); and elements for driving said power elements mounted on another substrate (34) for the purpose of providing a highly efficient and cost-effective power capabilities in small, robust, and thermally managed configuration (see paragraph [0007]).

Since inventions of Kurz, AAPA, and Beihoff et al. are from the same field of endeavor, the purpose of the package structure taught by Beihoff would be recognized in the invention of Kurz and AAPA.

It would have been obvious to a person of ordinary skill in the relevant art at the time the invention was made to provide said active rectifier module of Kurz or AAPA in a package as taught by Beihoff et al. in order to provide highly efficient and cost-effective power capabilities in a small, robust, and thermally managed configuration (see paragraph [0007] of Beihoff et al.).

• Regarding claim 2, Beihoff et al. further disclose a first lead frame (134), and a first lead frame support (126), said lead frame being supported on said first lead frame support over said plurality of substrates (see figure 11).

• Regarding claim 3, Beihoff et al. further disclose that the lead frame support is attached to the base plate (figure 11).

• Regarding claim 4, Beihoff et al. further discloses that the lead frame support surrounds said plurality of substrates.

• Regarding claim 5, Beihoff et al. further disclose a second lead frame (136), and a second lead frame support (122), said second lead frame being supported above said first lead frame by said second lead frame support.

• Regarding claim 6, Beihoff et al. further disclose that the first lead frame is used to connected a phase of a stator to said active rectifier and said second lead frame serves as an output lead frame for said active rectifier (paragraphs [0056] and [0070]).

• Regarding claim 9, Beihoff et al. further disclose a conductive block ('148', figure 14) on at least one of said substrates (14), said conductive block extending above said substrate.

Response to Arguments

4. Applicant's arguments have been considered but are moot since the amended claim 1 still reads on Kurz or AAPA as modified by Beihoff et al as shown in the body of the rejection.

Further, Applicant contends that contrary to what disclosed by Beihoff "a module according to the present invention calls for a heatsink, which is used for heat dissipation from the base plate". Examiner would like to direct the Applicant's attention to the fact that this language is not present in the claims. The claims are broader that argued. Further, Applicant contends that "[A]s described in paragraph [0074], interface plate 148 provides a path to thermal support 12 so that heat generated by power devices may be dissipated. Thus, as is clear the part that functions as the heatsink is thermal support 12 not the interface plate 148". In response, Examiner would like to direct the Applicant's attention to the fact that in the rejection the heat sink was identified as members (148) **and** (160) and these members do serve to remove heat from the power elements (130) (see [0075]), and therefore, can be rightfully called a heatsink. Further, Applicant went on by stating: "[O]n the other hand, a module according to the present invention calls for a

heatsink, which is used for heat dissipation from the base plate". Again, this language is not in the claims, which are broader than argued.

In view of the above, the rejection is believed to be proper, and is hereby maintained.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 571-272-2047. The examiner can normally be reached on Monday-Friday, between 10:00 am and 6:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anatoly Vortman, P.E.
Primary Examiner
Art Unit 2835

AV